Moderator:
Sonja Ruetzel
ICT4D Partnerships & Conference Manager
Catholic Relief Services

Speakers:
Abi Gleek
Director of Digital Strategy
Every1Mobile

Robert Kanwagi
Program Coordinator
World Vision Sierra Leone

Njide Ndili
Country Director
PharmAccess Foundation

Rebecca Litner
Program Manager
D-tree International

Dr. Andrew Karlyn
Chief Impact Officer
Living Goods
Discussion: 10-Day Handwashing Challenge

Abi Gleek
Director of Digital Strategy
Every1Mobile
Reward

Reinforcement

Awareness

Behaviour Change Approach

Commitment
“Thank you!! For the hand washing challenge i'm happy for completing it since, i have learnt some good hygiene practices and personal cleanliness”

“I do it more often. My daughter even reminds me anytime I forget or before we eat anything when we are together”

“It was a challenge at first but now it is easy and fun was washing our hands. My daughter now enjoys the challenge and we wash our hands daily, three to four times a day. Thanks U afya for the hand wash challenge”

“It is part of my family now and I even bought handwash soap when the challenge started”
Continue the conversation...

Abi Gleek  
Director of Digital Strategy  
abi@every1mobile.com
Discussion: Mobile Training and Support Service: using technology to increase Ebola preparedness of remotely located community health workers in Sierra Leone.

Robert Kanwagi,
EBODAC Programme Coordinator,
World Vision
MOTS stands for Mobile Training and Support service. It is an open-source platform designed to provide refresher training delivered via an Interactive Voice Response (IVR) system in the participant’s preferred language using a mobile phone without the need for a Smartphone.

1. Strengthen the Community Health Worker network
   - Backbone of the healthcare system at the household level in many middle to low income countries

2. Provide refresher training to CHWs via their mobile phones with feature phones as the basic requirement
   - Training can be completed at own convenience
   - Training provided in preferred language of CHW

3. Reporting
   - Tracking and monitoring of CHWs by their supervisors via the MOTS application (web & smartphone app) with offline support
   - Determine areas that need to be strengthened per CHW
How does MOTS work?

1. Selected CHWs are registered in MOTS system
2. Selected training module(s) is sent to CHWs
3. Remotely located CHWs receive training module on their mobile phone
4. CHWs listen to training messages & answer quiz questions

Report generated by MOTS on #CHWs training completed
Key Learnings

- User/human-centered design addresses the unique needs - best done by involving the end users in the design and conducting a functionality assessment to inform the technology platform design.

- Developing digital platforms that integrate both the service delivery (Training + Digital Interactive Messaging) and operational support functions (Supervision + Monitoring + Report) helps address challenges that undermine rapid scale up.

- Training modules should aim to achieve 1-2 learning objectives that build on one another. Too much information at once, especially via mobile, can lead to lower knowledge uptake.

- CHWs found it useful taking the training in their own preferred local language. Differences in dialects of a language should be taken into consideration when designing content.

- Involvement of Ministry of Health/Govt in the planning and deployment of MOTS and working within established MOH structures ensures training is taken seriously and provides an already established escalation path for any issues.

- The gender of the CHW was found to be influential on whether the trainings were completed and whether knowledge improved—Male CHWs were less likely to complete the trainings compared to their Female Colleagues. (Sierra Leone deployment)

- Your practical sustainability plan (Not paper plan) should always be part of the technology platform design and implementation and Not part of your project close out plan.
## How has MOTS been used?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Location</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot</td>
<td>Bo, Sierra Leone</td>
<td>125 CHWs (5 chiefdoms)</td>
</tr>
<tr>
<td>Deployment</td>
<td>Kambia, Sierra Leone</td>
<td>811 CHWs (all chiefdoms)</td>
</tr>
<tr>
<td>Ebola vaccine campaign</td>
<td>Rwanda</td>
<td>1,500+ CHWs &amp; Community Stakeholders</td>
</tr>
</tbody>
</table>
MOTS and COVID-19

- Provide Remote training to CHWs and other frontline health workers & other sectors (MoH- Sierra Leone will be using MOTS train 6,000 CHWs in on COVID-19 prevention)
- Conduct rapid Surveys to guide planning for response interventions (MOTS is being positioned to conduct survey of food insecure households in Kinshasa)
- Emergency broadcasts (Digital Interactive Messaging) to create awareness and rumor mitigation
- Reporting on response interventions- quantitative data
Field photo (Sierra Leone)
Resources on MOTS


• Mobile training and support (MOTS) service-using technology to increase Ebola preparedness of remotely-located community health workers (CHWs) in Sierra Leone. mHealth, 5, 35. [https://doi.org/10.21037/mhealth.2019.09.03](https://doi.org/10.21037/mhealth.2019.09.03)

• Bo Pilot video documentary: [https://youtu.be/8AsoWxMAUqw](https://youtu.be/8AsoWxMAUqw)
EBODAC has received funding from the Innovative Medicines Initiative 2 Joint Undertaking, a joint undertaking between the European Union and EFPIA, under grant number 115847 (EBODAC).
Discussion: Mobile Tool for Tuberculosis Screening: increasing case detection of tuberculosis in Nigeria, community-based screening, and real-time information sharing with Android-based mobile application.

Njide Ndili,  
Country Director, Nigeria,  
PharmAccess Foundation
Digital Applications for Disease Monitoring: Lessons Learned
Brief for the ICT for COVID-19 Response 2020
PharmAccess Initiatives in Nigeria

**Demand Side Activities**
Our demand side activities involve providing technical support to states to setup their health insurance schemes, including the technology platform for scheme administration.

**Supply Side Interventions**
Under our supply side interventions, we provide the following services:
- Quality improvement via the SafeCare methodology
- Enabling technology for facility assessment
- Capacity development for industry regulators

**Access to Finance**
Our approach to providing access to finance involves strengthening the capacity of financial institutions to lend to healthcare providers via out Medical Credit Fund.

**Vertical Programs**
PharmAccess is also engaged in implementing vertical programs for specific donor agencies. Some of our vertical programs are:
- BMF
- Saving Lives at Birth (SL@B)
- IntegratE project for the Bill and Melinda Gates Foundation
MATS | Development of a mobile app for TB Screening

1. High TB burden in Nigeria
2. Inadequate Case Detection
3. Paper-based TB Checklist
4. MATS in use across Nigeria
5. Extensive Consultations
6. Iterative Improvements
The PharmAccess Design Approach - USER CENTERED DESIGN

1. RESEARCH
   Discuss with intl. and local COVID-19 experts
   Understand disease and its impact

2. ENGAGE
   Engage with partners and stakeholders
   Understand their immediate and long term needs

3. DESIGN
   Develop requirements based on identified needs
   Use appropriate technology

4. IMPLEMENT
   Implement solution with stakeholders
   Review as we implement

5. EVALUATE
   Collect stakeholder feedback
   Review and implement feedback

**Overall goal is adoption to strengthen health systems**
Lessons from MATS – Program Design

Mobile Application for Tuberculosis Screening (MATS)

Talk to experts

Engage end users

Develop key requirements and Prototype

Pilot and Collect feedback

Continuous evaluation

Share learnings

RESEARCH

Engage

Design

Implement

Evaluate

• WHO
• NCDC
• State EOCs

• NCDC
• Rapid public surveys
• Identify critical gaps

• Design solution: Mass screening for COVID19 using chatbots

• Pilot chatbot on Messenger
• Collect feedback
• Roll out on other platforms

• Analyze and evaluate for reach and impact

Digital Screening Tools for COVID-19
### Lessons learnt using MATS for Disease Monitoring

<table>
<thead>
<tr>
<th>QUALITY OF CARE</th>
<th>COST–EFFECTIVE FINANCING</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased testing by many health workers - tool is based on mobile technology</td>
<td>• Enables funds from vertical programs integrated into horizontal programs</td>
</tr>
<tr>
<td>• Better compliance with clinical guidelines programmed into algorithm of the tool</td>
<td>• More efficient disease fund allocation with integration of our poverty mapping tool</td>
</tr>
<tr>
<td>• Improved triage to designated specialized treatment centers based on GIS mapping</td>
<td>• Reduction in over-supply of drugs and treatments based on accurate diagnosis</td>
</tr>
<tr>
<td>• Supports individual and population monitoring, identifies hotspots</td>
<td>• Reduction in waste and service overheads</td>
</tr>
<tr>
<td>• Only positive tests are triaged reducing stigmatization</td>
<td>• Provides real-time data for better decision-making, including manpower and inventory management</td>
</tr>
</tbody>
</table>
General Lessons Learned

**Digital tools enhance disease monitoring**
- Consult widely **BEFORE** designing your solution

**Engage with the health workers and end users**
- Understand their peculiarities

**Appropriate technology. Prototype. Pilot.**
- Your first version should NOT be your last version

**Solutions are a continuous reiterative process**
- Circumstances change. Be adaptable.
Thank you
Discussion:  
Tuberculosis Management System using Near Field Communication and Mobile technology

Rebecca Litner,  
Program Manager,  
D-tree International
Tuberculosis management among migrants using mobile and NFC technology—lessons for COVID-19

Rebecca Litner
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@DtreeInt
Tuberculosis management for migrants

Challenges:
- Mobile population
- Language barriers
- Cross-border
- Access to health care
- Poor socio-economic
- Poor sanitation
- Limited identification
- Limited connectivity
Mobile and NFC technology

What is NFC?
Near field communication technology is a low cost digital storage device which comes in various forms: card, keychain, bracelet, sticker and more.

How does it work?
Front line health worker stores patient information to the NFC card by simply tapping the mobile phone to the NFC card. The patient keeps the NFC card and brings it with him/her to any program encounter.
Multiple users and patient mobility

DISTRICT 1

DISTRICT 2

NFC TB Info

NFC TB Info
Benefits of NFC

Patients
- Patient movement
- Language-independent
- Patient-centered

Providers
- Multiple health workers
- Patient record retrieval
- Low connectivity settings

Program Managers
- Low cost
- Secure data
- Track continuity of care and patient movement
Considerations for COVID-19

- Migrants are highly mobile and therefore likely vectors of infectious diseases.
- They are a high risk group considering overcrowding, sanitation issues, and barriers to care.
- Longitudinal follow up is a challenge for the migrant population, including contact tracing and monitoring.

- Programs including mobile and NFC technology can be used as a solution for better case identification and management.
  - Use in low connectivity settings
  - Multi-lingual, cross-border support
  - Longitudinal case management
“Any public health response to the pandemic (COVID-19) should reach the most vulnerable, including refugees, migrants and those who are internally displaced. This means ensuring equitable access to testing and treatment as well as access to prevention information and to water and sanitation services. ” - UNICEF
Discussion: Testing mHealth Solutions at The Last Mile

Dr. Andrew Karlyn
Chief Impact Officer
Living Goods
A tale of two mHealth initiatives

ICT4D Webinar, April 21, 2020

Andrew Karlyn, PhD

Chief Impact Officer
Living Goods

akarlyn@livinggoods.org
Karlyn, A. et al.. Testing mHealth Solutions at The Last Mile: Insights from a Study of Technology-Assisted Community Health Referrals in Rural Kenya. mHealth. Accepted for publication April 2020, forthcoming

Closed loop referrals & follow up for Maternal, Neonatal and Child Health & Integrated Community Case Management
What is the impact of introducing the intervention on household perception of CHWs, CHW services, referrals, health status, health facilities, follow-up experience and recovery speed?

Closed loop for HIV Self-Testing, referrals & follow up
What is the impact of the HIVST intervention on households’ perception of CHWs, CHW services, referrals, health facilities and follow-up experience?
What went wrong?

1. No significant improvements in CHW visits or completed referrals
   
   *but* ...  
   • Increased the frequency of visits to households by CHWs

2. The majority of respondents within the HIV self-testing group had not used HIV self-test kits at the time of the evaluation
   
   *instead* ...  
   • Clients preferring to conduct HIV tests at a health facility
   • HIV testing did increase significantly for the HIVST group versus the control group irrespective of the source of the test. Thus appears that attitudes of trust and confidence in CHWs is high but limited to referral services and not to diagnostic and curative services
Community need should be the top criteria for vetting any and all proposed innovations, followed by strategic alignment and feasibility.

1. Is there a clear need?
   - Is the innovation supported by multiple end-user testimonies, observation data or insights?
   - Is there research supporting the innovation?
   - Did the proposer start with a problem, instead of a solution?
   - Is there a clear problem statement supporting the innovation?
   - Is the end-user defined?
   - Will the concept be simple to use for the end user?
   - Is the innovation clinically tested, or failing that, is there a proven use case?

2. Does it align with strategic focus?
   - Does the innovation have the potential to improve positioning in the innovation ecosystem?
   - Are there significant health outcomes?
   - Is there potential for Governmental support?

3. Is it technically & organizationally feasible?
   - Do high level cost estimates suggest this is financially feasible?
   - Is there capacity to support its development and integration?
   - Are there skills to support its development, and integration?
   - Is there technical combability with LG’s systems?
   - Will it divert capacity away from other technology priorities?
   - Is there a clear path to scale?
## Stages in the innovation life cycle/value chain

<table>
<thead>
<tr>
<th>Stage</th>
<th>Ideation</th>
<th>Research and Development</th>
<th>Proof of Concept</th>
<th>Transition to Scale</th>
<th>Scaling</th>
<th>Sustainable scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td>Clearly understood problem and an idea or set of ideas to develop and test</td>
<td>Evidence to support a ideas and development of idea into solution</td>
<td>An early assessment of technical, operational and financial viability of the innovation</td>
<td>Capability and capacity to support scale</td>
<td>Replication and/or adaption of innovation across large geographies and populations</td>
<td>Wide-scale adoption or operation of an innovation, sustained by an ecosystem of actors</td>
</tr>
<tr>
<td>Example activities</td>
<td>Develop problem statements with ecosystem members (e.g. Ministry of Health (MoH), CHWs)</td>
<td>Conduct initial scan on evidence base to support idea or intervention</td>
<td>Develop and iterate prototype</td>
<td>Refine innovation and operational set-up for scale</td>
<td>Establish solution project management team</td>
<td>Educate required stakeholders on the benefits of collaborations</td>
</tr>
<tr>
<td></td>
<td>Assimilate ideas</td>
<td>Conduct initial analysis on feasibility</td>
<td>Develop and execute initial pilot</td>
<td>Identify and prepare community testing-ground</td>
<td>Develop implementation plan</td>
<td>Make agreements with governments, NGOs and/or private sector partners necessary to support long-term viability of solution</td>
</tr>
<tr>
<td></td>
<td>Filter and select most promising ideas</td>
<td>Collect evidence on cost-effectiveness and impact</td>
<td>Conduct cost-benefit modelling</td>
<td>Conduct larger scale pilot</td>
<td>Align all stakeholders necessary to roll out innovation on required involvement</td>
<td></td>
</tr>
</tbody>
</table>
### Shift from disruptive to incremental innovations

<table>
<thead>
<tr>
<th>Innovation type:</th>
<th>EVERYDAY</th>
<th>INCREMENTAL</th>
<th>DISRUPTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong></td>
<td>Small, purposeful changes to the way staff work within existing roles</td>
<td>New / improved feature or process using technology proven to impact health outcomes</td>
<td>Unproven application of technology to improve health outcomes</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>Designing more effective comms</td>
<td>Community-initiated health assessment</td>
<td>3D scanning for growth monitoring</td>
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</tbody>
</table>

Source: Accenture analysis
Questions?
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D-tree International

Dr. Andrew Karlyn
Chief Impact Officer
Living Goods
Upcoming virtual events include:

Thursday April 23: **Donor Panel on Data Protection Priorities & Expectations**

Tuesday May 5: **Using Digital Tech to Help Fight Covid-19 Miscommunication**


[www.ict4dconference.org](http://www.ict4dconference.org)